IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Docket No: Q87762
Atsushi Kikuchi et al.
Appln. No.: 10/533,301 Group Art Unit: 1794
Confirmation No.: 5170 Examiner: Walter B. Aughenbaugh
Filed: January 13, 2006
For: PREFORM, METHOD OF PRODUCING THE SAME, AND BIAXIALLY DRAWN CONTAINER MADE FROM THE PREFORM

DECLARATION UNDER RULE 1.132

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Muneki Yamada, hereby declare and state that:

In March, 1968, I graduated from the Tokyo University.

In April, 1968, I was employed by TOYO SEIKAN GROUP, Corporate Research & Development, Yokohama, Japan, as a research chemist, and since then up to 1993, I had been engaged in the research and development of the materials and compositions of the containers and their moldings, and I retired in 2007.

I am one of the inventors of described and claimed in U.S. Patent No. 4,528,219, which patent is assigned to my former employer TOYO SEIKAN KAISHA, LTD. I have carried out the investigation, which lead to the filing of a patent application issued as U.S. Patent No. 4,528,219, together with my co-inventor Akira Sakamoto in the normal course of our employment with TOYO SEIKAN.

I have closely studied the Office Action dated September 15, 2009 issued in connection with Application No.

10/533,301, where claims 1-3 were rejected as lacking novelty over my U.S. Patent No. 4,528,219 which was cited as disclosing a preform meeting the structural and compositional limitations of the rejected claims, including a continuous multi-layer structure formed by compression-forming a molten resin mass. In this regard, the Examiner quoted the re-heated pipe disclosed at column 7, lines 4-14 and at column 11, lines 47-49 of my patent as meeting the claimed "molten resin mass," and further pointed out that the claimed continuous multi-layer structure is met because the walls of the body of the preform of my patent are continuous.

TOYO SEIKAN is no longer forming preforms in accordance with the method described in my patent, that is, by extruding a multi-layer pipe having both ends open, re-heating the upper and lower end portions of the pipe, and forming a threaded mouth portion and a body portion by compression molding. However, the TOYO SEIKAN Research & Development staff delivered for my inspection an old stock multi-layer extruded pipe and preform that I confirm are the same as those described in my patent. I can assure this fact because of the following reasons.

Namely, I have determined that the pipe and the preform are the same as the pipe and the preform disclosed in my U.S. Patent No. 4,528,219 relying upon the appearance of the preform and the results of analysis conducted by Mr. Funaoka given in a separate paper.

That is, wrinkles formed in the bottom of the preform (attached Fig. 7) prove the fact that the preform was formed by heating the end portions of the pipe and melt-adhering the bottom portion by the compression-forming. This forming method is in agreement with the description of my U.S. Patent No. 4,528,219, column 7, lines 8-14.

According to the results of analysis by Mr. Funaoka, further, it is obvious that the preform has an outer layer of polyethylene terephtalate (PET) and an intermediate layer (barrier layer) of an ethylene/vinyl alcohol copolymer

(EVOH). It is, further, obvious that a substance having an amide bond is present in the interface between the outer layer and the intermediate layer, which is contained in neither the outer layer nor the intermediate layer (barrier layer). It is highly probable that the substance having the amide bond located between the PET and the EVOH is an adhesive that comprises a polyethylene terephthalate/isophthalate copolymer and a caprolactam/hexamethylenediammonium adipate copolymer used in Examples of my U.S. Patent No. 4,528,219. It is, therefore, considered that the preform is in agreement with the multi-layer structure of my U.S. Patent No. 4,528,219.

Further, the TOYO SEIKAN Research & Development staff delivered for my inspection photographs of the old stock multi-layer extruded pipe and preform bottom made according to U.S. Patent 4,528,219. These photographs (attached Fig.1~10) show that the multi-layer structure does not run continuously through the body and entire bottom portion of the preform.

In obtaining a preform for a bottle, I described in my patent (at col. 7, lines 8-14) that:

> **In case of a preform for a bottle, ... the extruded melt multi-layer pipe is quenched and then cut into a predetermined length, and then the ends of the resulting pipe having openings on both the ends are heated and formation of the mouth and fusion bonding of the bottom are accomplished by compression forming.**

In Example 4, a plurality of resin layers were extended from a multi-layer pipe extrusion device. The molten pipe thus obtained was molded into a pipe having both ends opened by means of a pipe melting device comprised of a sizing unit, a cooling tank and a cutter. The upper and lower end portions of the resulting pipe were re-heated, and by a compression molding method, a threaded mouth portion and a bottom portion were formed to give a preform. Portions of

the preform other than the threaded mouth portion were heated and subjected to blow molding to form a bottle including a body portion and bottom having the shape shown in FIG. 1 of my patent.

By re-heating both ends of the pipe having a multi-layer structure and forming a threaded mouth portion and a bottom portion by compression molding, the bottom portion was shaped by crushing the open pipe and melt-adhering the resin. As a result, as is obvious from the attached Fig.6, the multi-layer structure of the pipe collapsed in the bottom portion. That is, in the preform of my patent, the intermediate layer was interrupted in the bottom portion, and the multi-layer structure did not continue therein.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: February 22, 2010

Muneki Yamada

Fig. 1

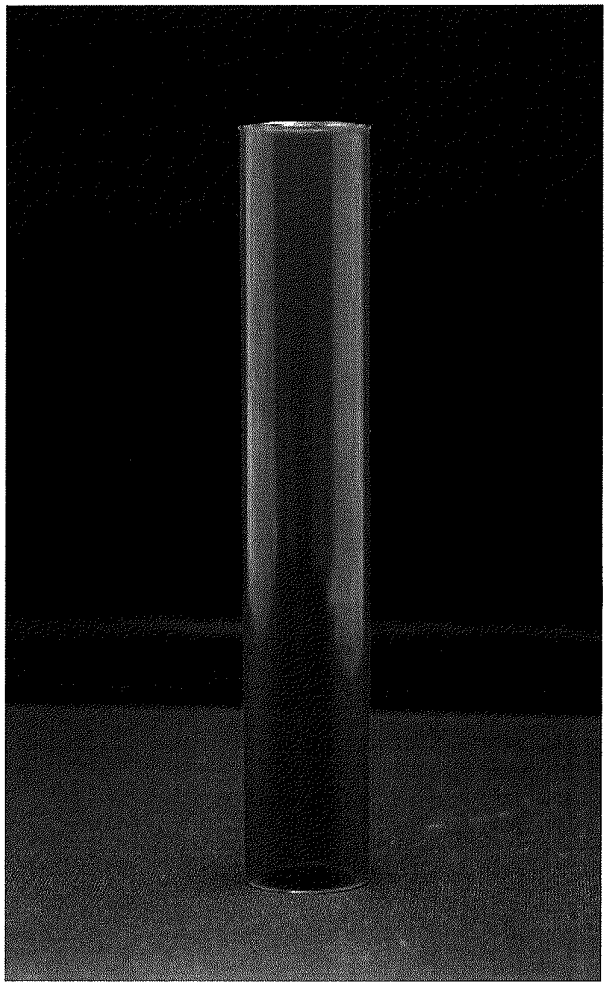

Fig. 2

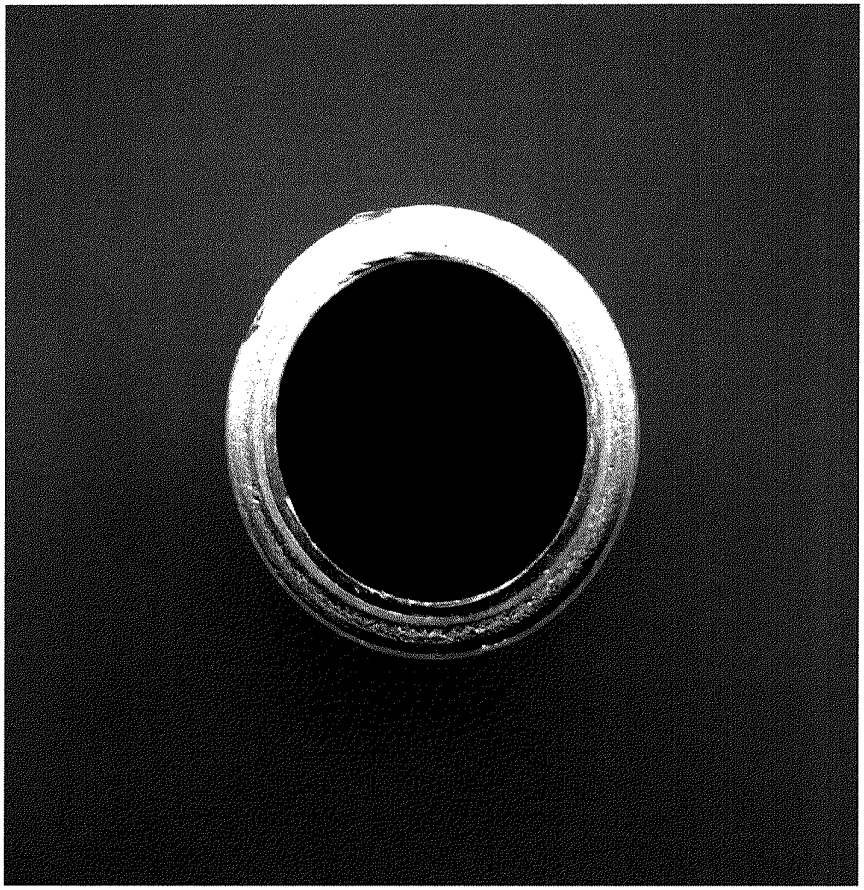

Fig. 3

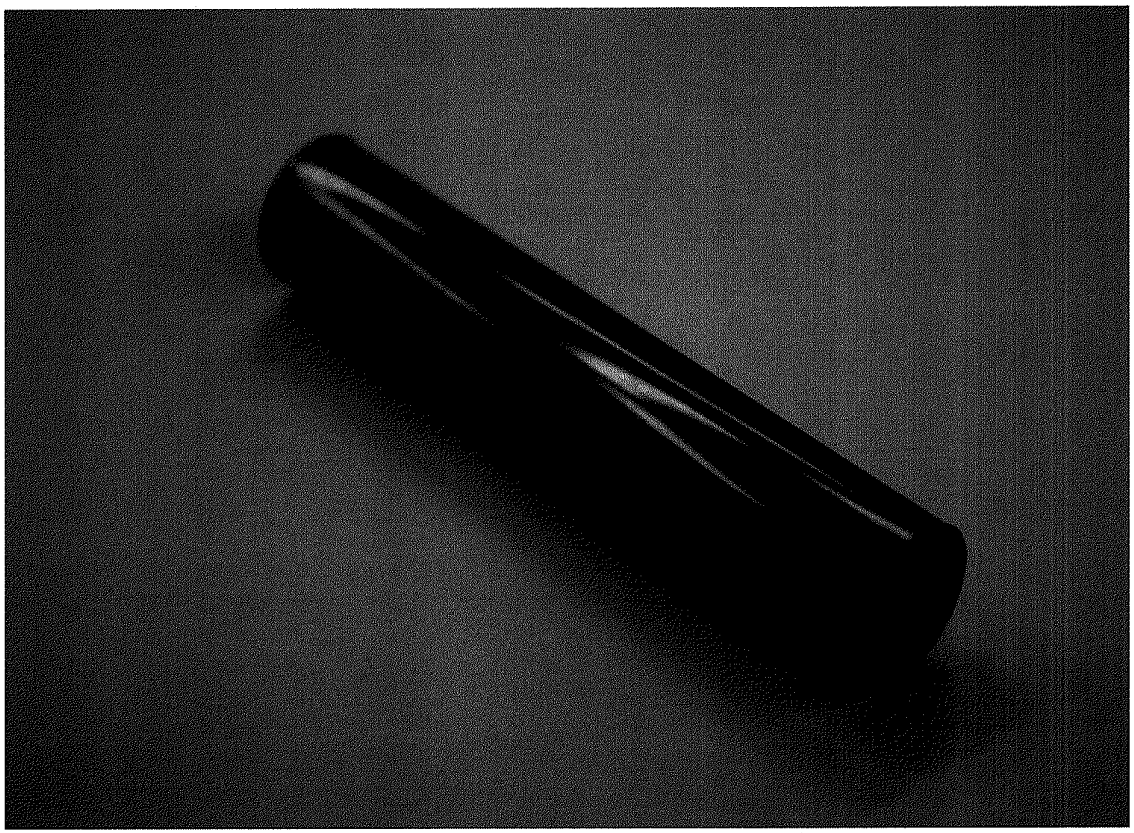

Fig. 4

Fig. 5

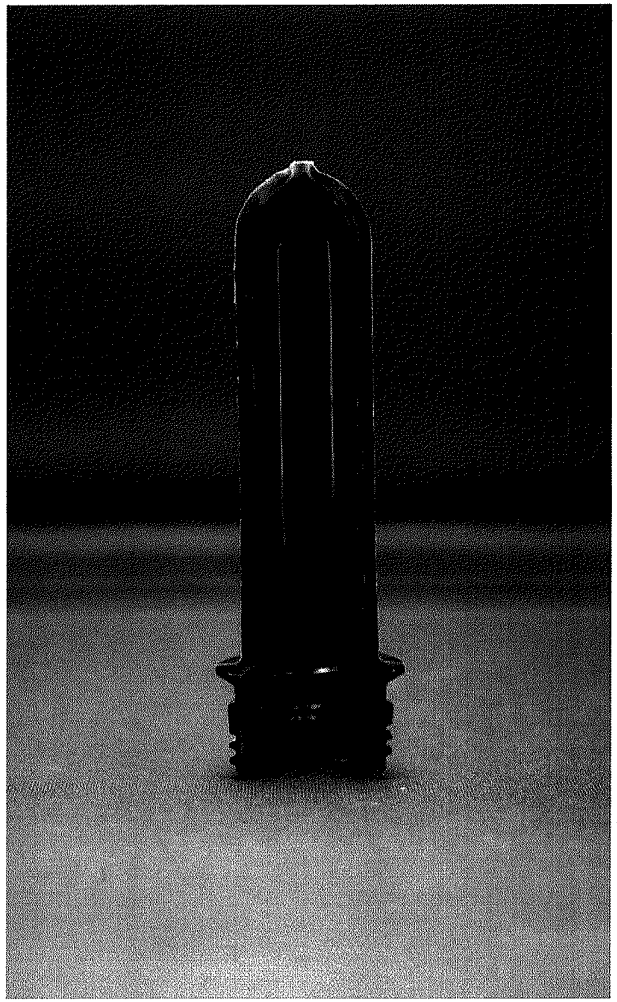

Fig. 6

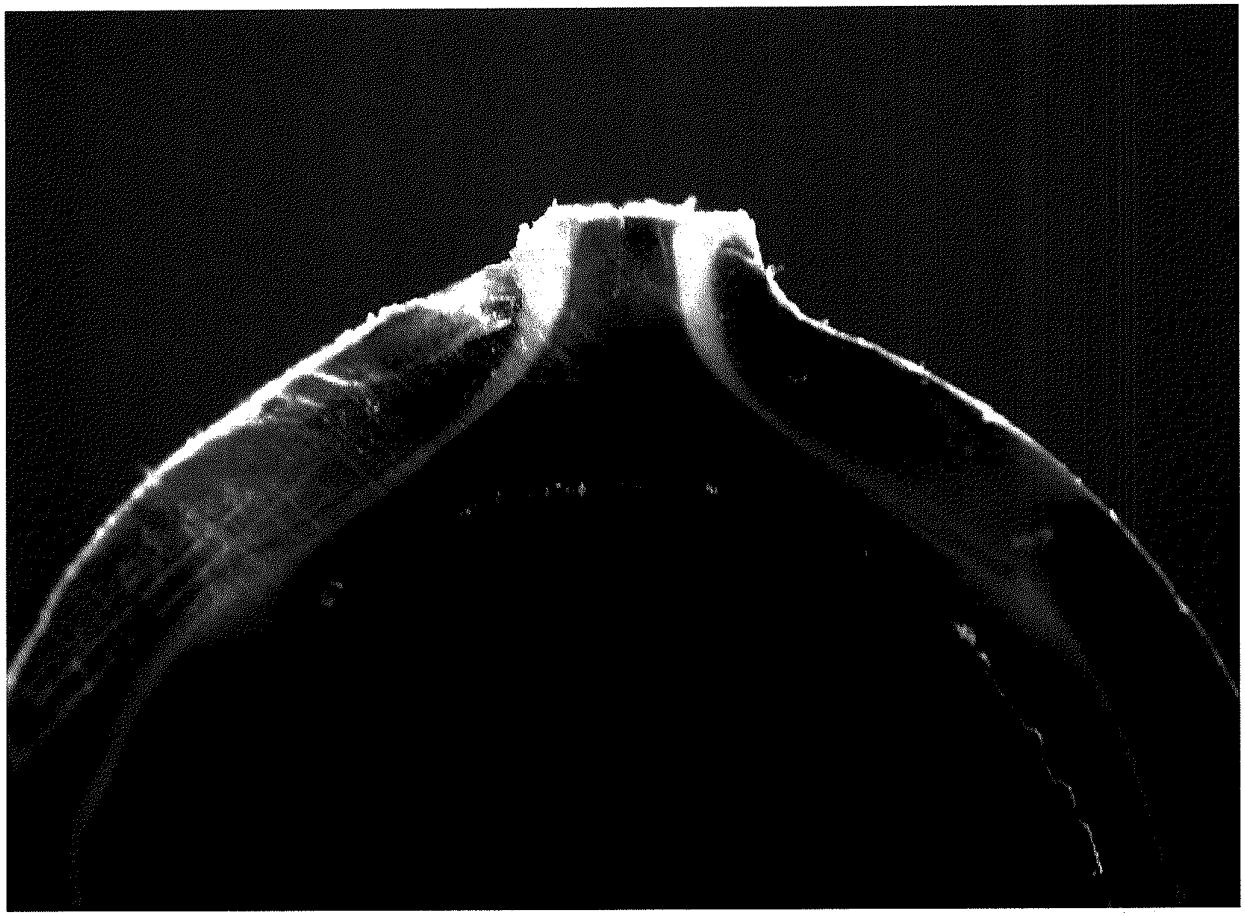

Fig. 7

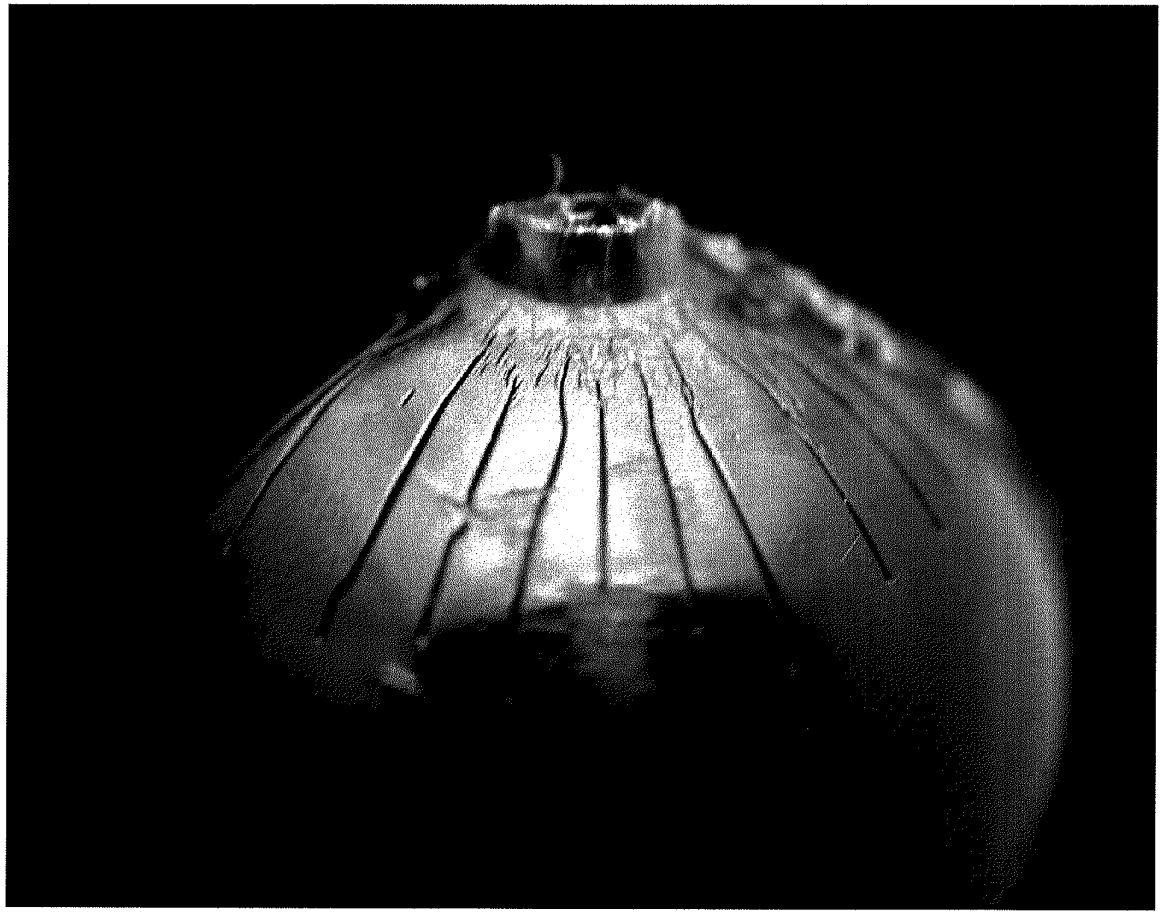

Fig. 8

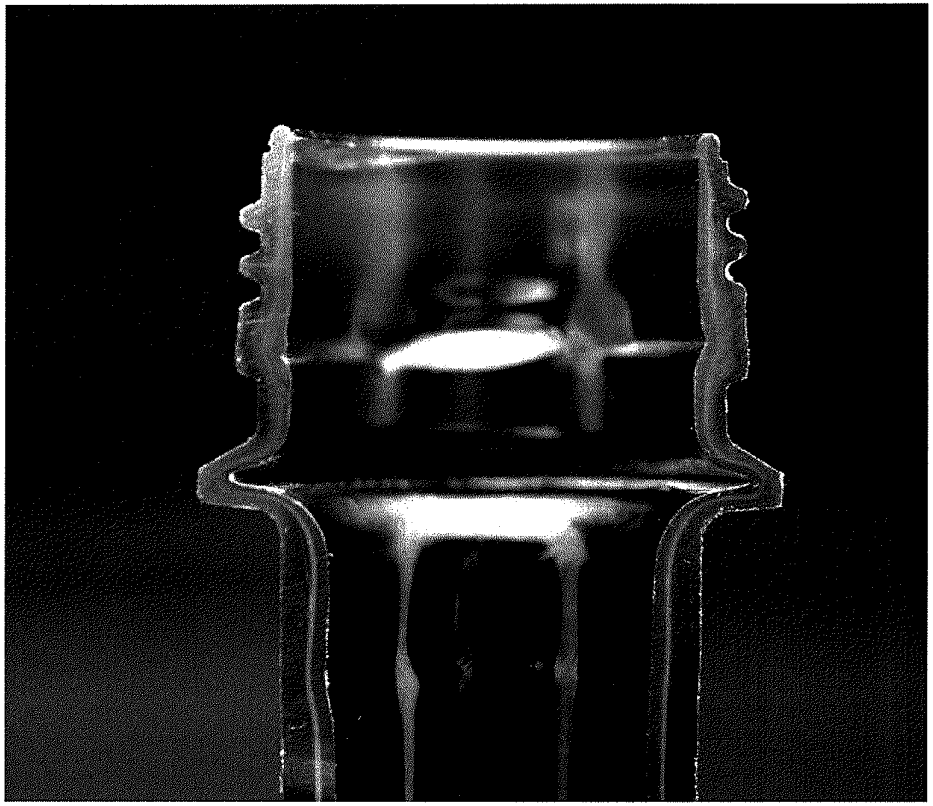

Fig. 9

Fig. 10